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Attorney's Docket No. 113692.34

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Helen M. Doherty et al :

Serial No.: 09/858,188

Filed: May 15, 2001

Group No. : 1764

Examiner: Jerry Johnson

For: Reduced Emissions Transportation Fuels

REPLY BRIEF ON APPEAL UNDER 37 C.F.R. § 41.41

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Appellants respectfully submit this Reply Brief in response to new arguments raised by the Examiner in his Answer to Appellants' Brief on Appeal. The claims on Appeal are Claims 16-19.

I. The Examiner has Raised New Arguments in His Answer

In his Answer to Appellants' Brief the Examiner for the first time refers to composition ranges contained in Statutory Invention Registration H1305 ("Townsend") in an attempt to show that Townsend is somehow not limited by its explicit teaching of gasoline compositions having an olefin content of 4 to 10 percent. The Examiner has made this new argument in response to the Appellants' clear showing that Townsend and the other prior art of record are in agreement that olefin content in reformulated gasoline must be reduced, generally to less than 10 percent by volume, in order to obtain a reduced emissions fuel.

Specifically, the Examiner asserts that because the total of the components for the fuel compositions disclosed in Townsend must add up to 100 percent, that Townsend necessarily contemplates fuel compositions having an olefin content of greater than 15 percent.

Second, the Examiner argues that because none of the cited prior art discloses that the olefin content "must" be less than 15 percent it can be inferred that compositions having an olefin content greater than 15 percent are inherently disclosed by those references.

Finally, the Examiner argues that the Appellants have not provided any evidence of unexpected results.

As a result, Examiner maintains that Claims 16 to 19 of the instant application are obvious over Townsend.

All of these new arguments are wholly without merit.

II. Townsend and the Cumulative Prior Art Teach the Necessity of Reducing Olefin Content

As demonstrated in Appellants' Brief on Appeal, Townsend contains no teaching of an oxygenated transportation fuel having sulfur content of less than about 300 ppm, an octane rating of from about 87 to about 94, a 50% D-86 distillation point of less than about 235°F, a 90% D-86 distillation point of less than about 360°F, an olefins content of greater than about 15%, a Reid Vapor Pressure of less than 7.5 and at least one oxygenate. The Examiner has admitted as much in his Answer at page 4. Further, the cumulative prior art demonstrates an accepted wisdom that olefin content must be reduced, generally to less than 10 percent to obtain a reduced emissions transportation fuel. Specifically, Townsend teaches an olefin content of 4 to 10% by volume. Townsend at col. 6, lns. 49-50. All of the examples contained in Townsend conform to this olefin content range. Townsend at col. 9, Table 1. Further, the other prior art of record: U.S. 5,288,393 and U.S. 5,653,866 to Jessup (collectively "Jessup"); U.S. 6,132,479 to Welstand et al ("Welstand"); and U.S. 6,328,772, U.S. 6,419,716 and U.S. 6,540,797 to Scott et al (collectively "Scott"), all teach olefin contents less than 15 percent. In the case of Welstand and Scott, the acceptable range is less than 10 percent. In the case of Jessup, it is preferred to have an olefin content approaching zero.

Therefore, as a purely factual matter, the Examiner has failed in the first instance to establish a *prima facie* case of obviousness since the prior art does not disclose each and every limitation of Claims 16 to 19 of the present application. Further, Appellants have proceeded contrary to accepted wisdom by producing an oxygenated transportation fuel having an olefin content greater than 15 percent to produce a reduced emissions transportation fuel complying with the emissions performance requirements of the Clean Air Act Amendments for Conventional Gasoline and for Reformulated Gasoline as predicted by the EPA Complex Model.

III. Townsend does not Contemplate Fuel Compositions having Greater than 15 Percent Olefin Content

In his Answer, the Examiner has provided a table showing percentage ranges for several components recited in Townsend. Although not entirely articulated by the Examiner, it is apparently the Examiner's position that because the sum total of the components listed in the table plus olefins must add up to 100 percent, that the disclosure of Townsend necessarily includes compositions having an olefin content of greater than 15 percent where the sum of the other components listed in his table is less than 85 percent. This position is erroneous for at least two reasons. First, it is based on an incomplete and inaccurate representation of the disclosure of Townsend. Second, the Examiner is reading compositions into the disclosure of Townsend that are contrary to the explicit teachings of Townsend.

There are several critical factual inaccuracies in the information provided by the Examiner in the table presented in his Answer. The cited section of Townsend recites a benzene content of up to 2 percent (Townsend at col. 7, lns. 16 to 22), which is ignored by the Examiner in his table. In addition, the aromatics content of 0 to 20 percent listed in the Examiner's table is incorrect, as this number refers only to aromatics having "8 or more carbon atoms per molecule." Townsend at col. 7, lns. 21 to 26. Aromatic compounds may have as few as 4 carbon atoms per molecule. The actual range for aromatics is provided in

Townsend at col. 6, lns. 47 to 49, which recites a "total aromatics" content of 10 to 25 percent. The Examiner also misconstrues the recited content of oxygenates. According to the disclosure of Townsend, an oxygenate is added to obtain an "oxygen" content of from 1 to 4 percent. This refers to the content of oxygen atoms, not the concentration of the oxygenate. (Townsend at col. 7, lns 41 to 45). For example, in the case where the preferred oxygenate methyl tert-butyl ether is used, the oxygen content of methyl tert-butyl ether is only 18 percent on a weight basis. Using an oxygen concentration range of 1 to 4 percent for a fuel composition would yield a concentration of methyl tert-butyl ether in the range of 5.5 to 22 percent. It is notable that the examples provided by Townsend all contain from about 13 to about 15 percent methyl tert-butyl ether. Where the oxygenate is methanol, the most oxygen rich oxygenate available (50 percent oxygen), an oxygen content of 1 to 4 percent still results in a methanol content in the range of from 2 to 8 percent. Therefore, the Examiner's table paints an inaccurate picture in that it grossly underestimates the quantity of oxygenate and aromatics contemplated in the compositions disclosed by Townsend and completely omits the content of benzene.

Finally and most importantly, the Examiner's analysis completely disregards the core teaching of Townsend that olefin content in transportation fuels must be reduced to obtain reduced emissions. The description cited by the Examiner as spanning column 7, lines 1 to 26 of Townsend, actually starts at column 6, line 43. It is this portion of the disclosure of Townsend that includes the accurate range for aromatics, and also contains the recited concentration range for olefins of 4 to 10 percent. If the Examiner wishes to rely on the ranges recited in Townsend for normal paraffins, isoparaffins, naphthenes and C₈ and higher aromatics to attempt to show obviousness of Claims 16 to 19 of the instant application, he cannot conveniently ignore a range recited for total aromatics and the key component, olefins, contained in the same description.

"It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of what other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art." Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 448 230 USPQ 416, 419 (Fed. Cir. 1986).

The Appellants provide the below table for the purpose of correcting the erroneous table contained in the Examiner's Answer. The below values are based on the disclosure of Townsend spanning col. 6, ln. 43 to col. 7, ln. 26.

<u>Component</u>	<u>General Vol. %</u>	<u>Preferred Vol %</u>
Normal paraffins	about 7 to about 12	about 8.5 to about 9.5
Isoparaffins	about 35 to about 60	about 40 to about 55
Naphthenes	about 6 to about 10	about 6.5 to about 8
Total Aromatics*	about 10 to about 25	about 12 to about 22
Olefins	about 4 to about 10	

*Total aromatics includes up to 2 percent benzene

Thus, contrary to the Examiner's assertion, Townsend does not "contemplate compositions comprising 'an olefins content of greater than about 15 volume percent.'" In fact, an accurate representation of the disclosure of Townsend clearly shows the opposite.

Even if one were to selectively pick and choose, as the Examiner has done, percentage concentrations for normal paraffins, isoparaffins, naphthenes, C₈ and higher aromatics and oxygenates that add up to less than 85 percent, this would still be contrary to the explicit teaching of Townsend that olefin content should be less than 10 percent. Just because a reference can be modified, does not make the modification obvious, especially if that modification is contrary to the explicit teaching of the reference. This is exactly the case here. The Examiner would have one of ordinary skill in the art modify Townsend in a way

that is contrary to the teachings of Townsend, where the other prior art also contains no motivation to do so.

IV. The Examiner's Statement that the Prior Art does not Teach that Olefin Content "Must" be Less than 15 Percent is Mere Speculation

The Examiner further states that "none of the prior art cited by appellants teaches that gasoline composition [sic] must contain less than 15 volume percent olefins." This statement amounts to mere speculation by the Examiner.

A statement that, "[a] relationship is 'probably satisfied' by the prior art is speculative and therefore does not establish a *prima facie* case of unpatentability." In re Rijckaert, 9 F.3d 1531, 1533 n.3, 28 U.S.P.Q.2d 1955, 1957 n.3 (Fed. Cir. 1993).

The Examiner has admitted that the cited prior art does not teach gasoline compositions having olefin contents of greater than 15 percent. Nonetheless, the Examiner takes that position, based on the fact that none of the prior art specifically excludes olefin contents of greater than 15 percent, that it can be fairly concluded that they could encompass those olefin contents. "The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient to establish inherency." In re Rijckaert, 9 F.3d 1531, 1534, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993).

All of the prior art of record teaches gasoline compositions having an olefin content of less than 15 percent. Townsend, Scott and Welstand specifically teach gasoline compositions having olefin contents of less than 10 percent. The mere fact that the Examiner can come up with combinations of the other components listed by Townsend in recited percentages that add up to less than 85 percent is insufficient to conclude that Townsend teaches olefin contents of greater than 15 percent. This amounts to mere speculation on the part of the Examiner.

V. Appellants have Shown Unexpected Results

The Examiner also asserts that there is no evidence of unexpected results of record in the instant Appeal. Appellants respectfully point out that this argument is moot in light of the above.

Regardless, Appellants respectfully submit that evidence of unexpected results is of record in the instant application itself. Tables 5, 7, 8 and 10 in the instant application demonstrate a reduction in emissions obtained using an oxygenated transportation fuel according to the current invention. Such a result is unexpected and contrary to the teachings of the cumulative prior art as shown above.

VI. Conclusion

The claims on appeal are not obvious under 35 U.S.C. § 103(a) over the cited reference. The Examiner's new arguments are based on an incomplete and inaccurate representation of the disclosure of Townsend and speculation about the prior art. Further, in asserting a lack of unexpected results the Examiner has completely ignored the data presented in the current application. Appellants have provided an accurate description of the compositions disclosed by Townsend, which clearly demonstrates that Townsend does not contemplate a reduced emissions transportation fuel having an olefin content greater than 15 percent. Appellants gratefully acknowledge the Examiner's withdrawal of the rejection under 35 U.S.C. § 112, first paragraph. It is respectfully requested that the Board use its authority to reverse the Examiner's remaining rejection under 35 U.S.C. § 103(a) and allow the application.

Respectfully submitted,



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Examiner

Jerry Johnson

Customer No.

041068

Group Art Unit

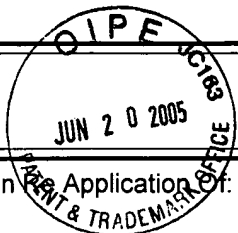
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Docket No.
113692.34

Inventor: Helen M. Doherty, et al.

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/858,188	15 May 2001	Jerry Johnson	041068	1764	9327

Title: **Reduced Emissions Transportation Fuels**

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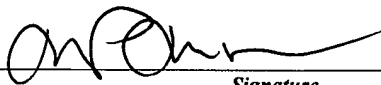
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